| PRODUCT NAME:	**PR-OBS-03v1.4C**	
CASE STUDY PERIOD: 02 – 03 Feb 2012	**METEOROLOGICAL EVENT:** Long lasting snowfall over Italy	
VALIDATION INSTITUTE: University of Ferrara	**Responsible:** Porcù F.	**Contact point:** porcu@fe.infn.it
PRODUCT DEVELOPER INSTITUTE: CNR- ISAC	**Developers:** Laviola S., Cattani E.	**Contact point:** s.laviola@isac.cnr.it
OPERATIONAL CHAIN INSTITUTE: CNMCA	**Responsables:** Zauli F.	**Contact point:** zauli@meteoam.it

METEOROLOGICAL EVENT DESCRIPTION

03FEB2012 00Z
500 hPa Geopotential (gpdm) und Bodendruck (hPa)
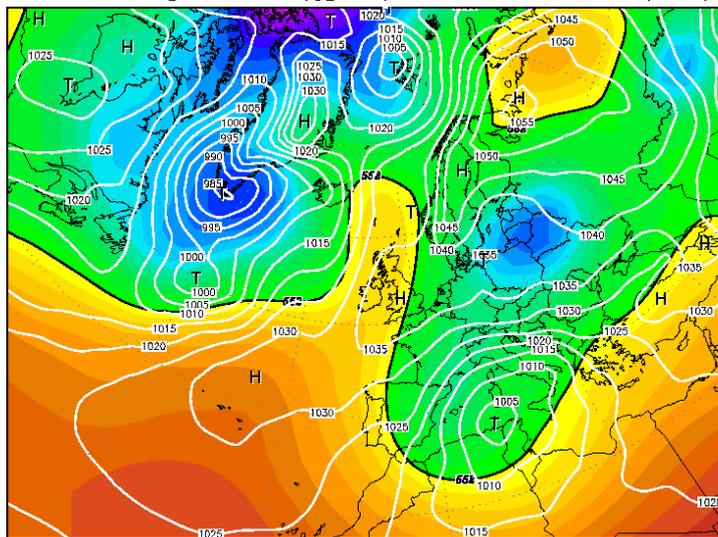
Daten: Reanalysis des NCEP
(C) Wetterzentrale
www.wetterzentrale.de

On the left panel the meteorological chart of 00:00 UTC on 03/02/12 is reported. A well developed surface low pressure system is present over north African coasts with high pressure gradient over Italy. An upper air low is also evident over Poland. This setting, lasting for several days, was a part of a long lasting series of snow episodes (14 days) caused by Siberian cold air joining moist Atlantic from the west. These episodes caused century records snowfall in most Italian regions, especially over northern Italy.

Examples of the related cloud systems are reported in the SEVIRI (12 μm channel) grayscale images of 02/02 18:00UTC (left) and 03/02 00:00UTC (right), where central Italy is covered by cold top clouds. In southern Italy some convection is present (especially over Sicily and Calabria), while on the Po Valley there is snow at the ground.
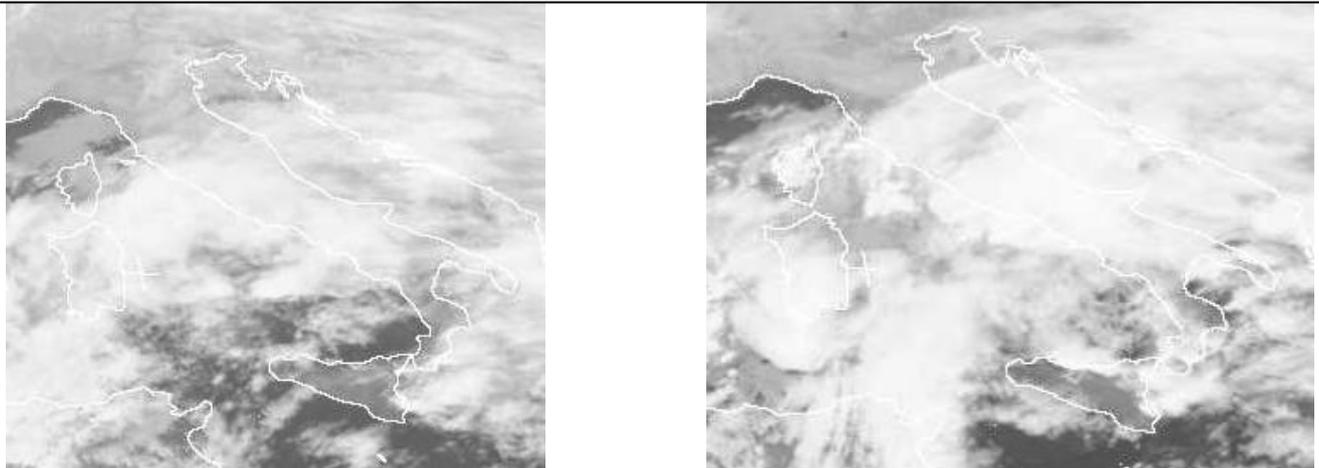
RESULTS OF COMPARISON

On the left panel the h03 rainrate map for 02/02/12 at 17:57 UTC is presented, while on the right panel the corresponding raingauge map cumulated at 18:00 of the same day. Clearly, h03 misses most of the precipitation spots detected by raingauges. Over Sardinia some precipitation is detected, but seems to be misplaced, while the rain over the Italian Peninsula is not detected at all, excluded few pixel along the coastline. The resulting skills score indicates very low POD (0.07) and comparably high FAR (0.57), while both HSS and ETS are very close to the no-skill value (0.0), indicating that the h03 is unable to resolve the current rain patterns.
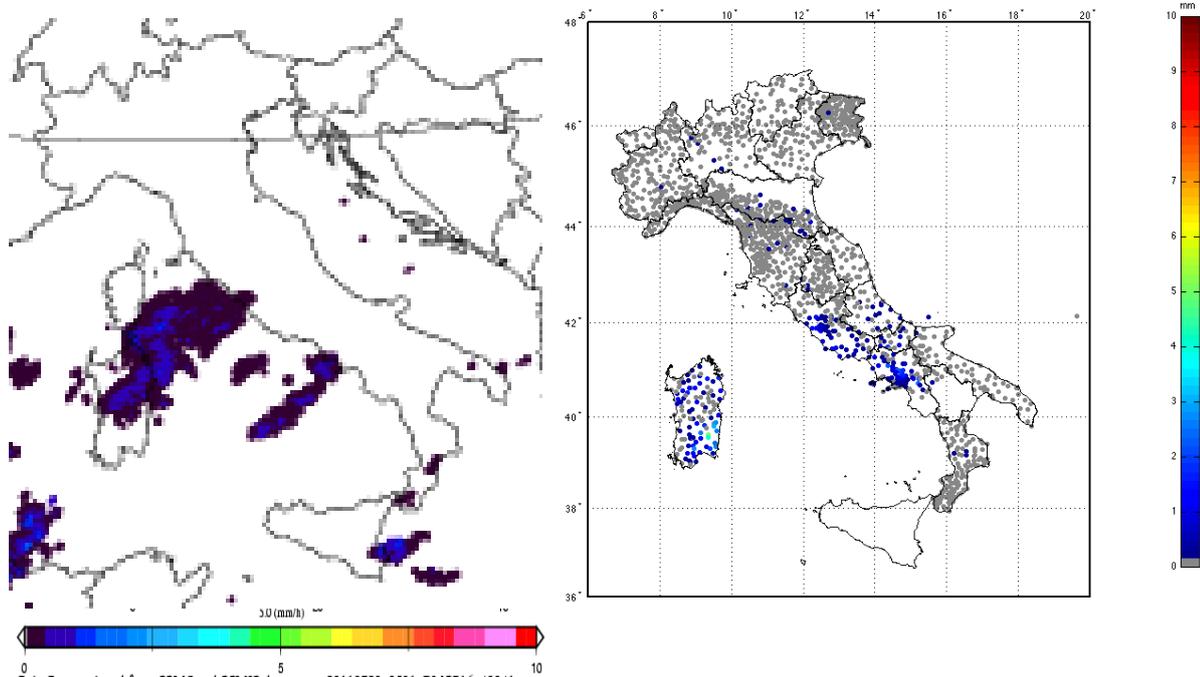
Few hours later, at 00:00UTC of 03/02/12, the raingauges map (on the right) shows precipitation over central Italy and Sardinia, and in this case h03 at 23:57UTC of the same day (on the left) shows very large wet areas over Sardinia and central Italy, with a clear overestimate of the precipitation rates. The statistical indicators show a marked increase of the POD (0.88) , while the FAR (0.56) is comparable to the one of the slot previously analyzed. The ETS is comparatively higher (0.29) well above the no-skill value, and the HSS (0.36) indicates a significant skill in correctly classifying precipitation rates.
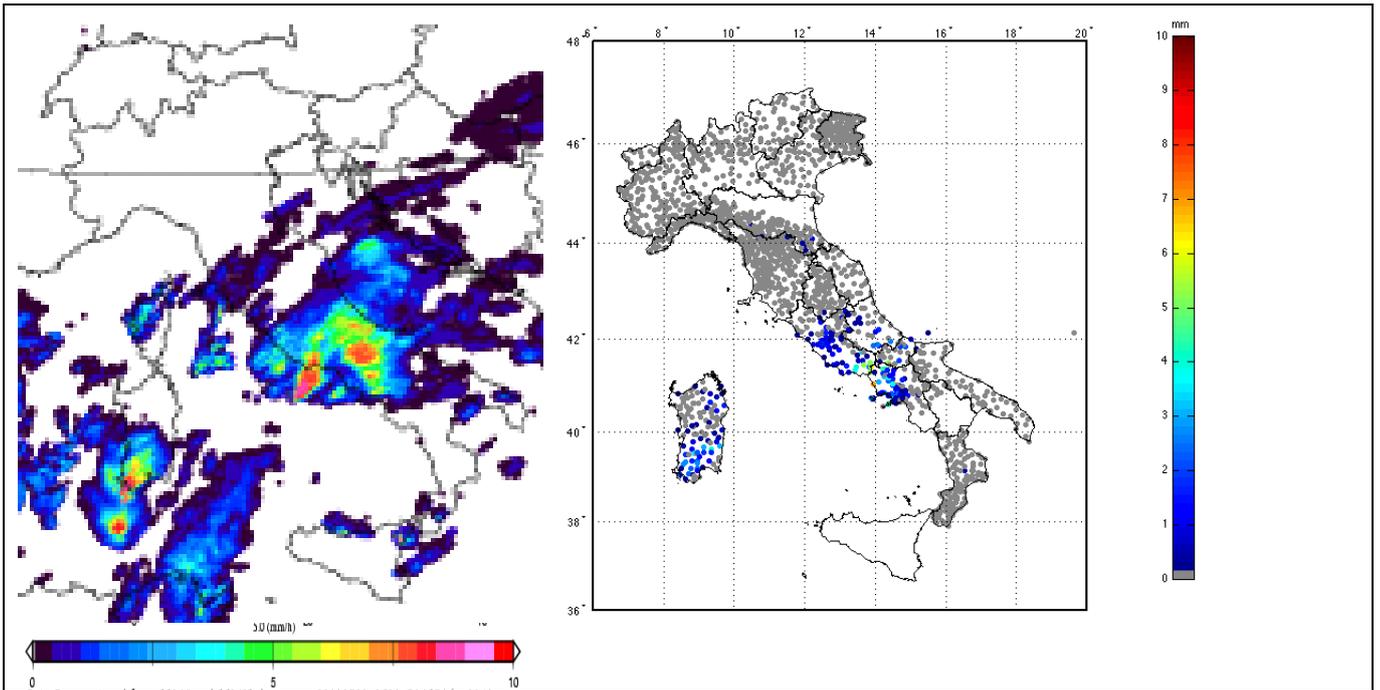
COMMENTS

The two slots considered here show very different behaviour of the technique, with marked differences in the POD value (from 0.07 to 0.88). Since the cloud structure in the IR images is quite similar between the two slots, this difference is probably related to the PMW calibrating overpass.

INDICATIONS TO DEVELOPERS

The technique shows high variability of the skill score values even at very short time intervals.